

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #180**



**KALAMAZOO RIVER/ENBRIDGE SPILL – REMOVAL  
SITE # Z5JS  
MARSHALL, MICHIGAN  
LATITUDE: 42.2395273; LONGITUDE: -84.9662018**

**US EPA ARCHIVE DOCUMENT**



**E4 Containment System (05/15/2013)**

**To:** Susan Hedman, U.S. EPA Regional Administrator  
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Tiffany Eichorst, City of Battle Creek  
Cheryl Vosburg, City of Marshall  
Christine Kosmowski, Calhoun County Water Resources Commissioner

**From:** Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

**Date:** 06/05/2013

**Reporting/Operational Period:** 0700 hours 05/06/2013 through 0700 hours 05/20/2013

### *1. Site Data*

<b>Site Number:</b>	Z5JS	<b>Response Type:</b>	Emergency
<b>Response Authority:</b>	OPA	<b>Incident Category:</b>	Removal Action
<b>Response Lead:</b>	PRP	<b>NPL Status:</b>	Non-NPL
<b>Mobilization Date:</b>	7/26/2010	<b>Start Date:</b>	7/26/2010
<b>FPN#:</b>	E10527		

### *2. Operations Section*

- The organizational response structure consisted of the following Branches: 1) Submerged Oil; 2) Containment; and 3) Waste Management.

#### **2.1 Submerged Oil Branch**

##### *2.1.1 Submerged Oil Science Group*

- The Spring 2013 Submerged Oil Reassessment began on May 15, 2013 and continued throughout the operational period, initially focusing on proposed dredge areas.
- Round 2 of 2013 Morrow Lake Delta and Morrow Lake monitoring (poling) was completed on May 10, 2013, pursuant to the 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan.
- Poling downstream of Morrow Lake Dam began on May 20, 2013.
- Ground disturbance clearance work was conducted throughout the proposed dredge areas.
- Quarterly sediment trap bathymetry was conducted throughout the operational period, pursuant to the Sediment Trap Monitoring and Maintenance Plan.
- Monthly CSD sampling was conducted from May 13 through 16, 2013.

### **2.1.2 Submerged Oil Compliance Group**

- On May 17, 2013, Enbridge submitted an MDEQ dredging permit application for the Ceresco Dam impoundment area. The application is currently in review by MDEQ.

## **2.2 Containment Branch**

### **2.2.1 Containment Compliance Group**

- No activities were conducted during this operational period.

### **2.2.2 Containment Recovery Group**

- Enbridge completed installation of the E4.0 Containment System (3,525 feet of surface hard boom and 2,750 feet of subsurface half-curtain) on May 14, 2013. Baseline bathymetry and maintenance of the E4.0 Containment System was conducted following installation.
- Control Point boom was installed at MP 15.25 South Mill Ponds on May 17, 2013, in response to continuous ribbons of sheen flowing from the South Mill Pond into the main channel.
- Enbridge monitored and maintained 725 feet of surface hard boom at the Ceresco Dam control point and 1,500 feet of surface hard boom at the MP 15.25 South Mill Ponds control point, including debris removal from within the boomed area.
- The conifer structure at MP 14.75 RDB Sediment Trap was repaired on May 15, 2013.
- Pursuant to the Emerging Oil Management Program (EOMP), Enbridge and U.S. EPA continued to track the location, response, and sheen differentiation test results (when necessary) of sheen and/or oil globules in the main channel and overbank areas. Observations of sheen and/or oil globules were reported back to Operations Section Chiefs for response, if appropriate. No sheen differentiation tests were conducted during the operation period. Refer to Table 1. Refer to Section 3.1 for locations of oil sheen and glob observations.
- Management of oil sheen and/or globules continued. Twenty-eight sheen responses were conducted during the operational period. Refer to Table 2.

## **2.4 Waste Management Branch**

- Cumulative quantities of soil, debris, and liquid shipped off-site during the response are presented in Tables 3 and 4.
- The cumulative quantity of recovered oil has been estimated using actual waste stream volumes, analytical data, and physical parameters of oil-containing media. A summary of the estimated volume of recovered oil is presented in Table 5.

## **3. Planning**

### **3.1 Situation Unit**

- Situation Unit personnel conducted field observations and overflights to document all operational areas, including the locations and integrity of CSDs, buoys and sediment trap structures; and locations of oil sheen and/or globules. During this operational period, overflights were conducted on May 8 and 15, 2013. See Section 2.2.2 for additional details regarding the EOMP.

- During this operational period, oil sheen and/or globules were observed at:
  - Source Area on May 15;
  - Ceresco Dam Impoundment at various locations between MP 4.5 and MP 5.89 on May 6 – 11, and May 14 – 18;
  - C3.2 Boat Launch (MP 10 LDB) on May 16;
  - Mill Pond Impoundment at various locations between MP 14.5 and MP 15.75 on May 6 – 11, and May 14 - 18;
  - Various locations between MP 21.30 and MP 33.0 on May 6 – 11, and May 16 – 18;
  - Morrow Lake Delta and/or Neck on May 6 – 11, and May 14 – 18;
  - Morrow Lake North and/or South Coves on May 6, 7, 9, 10, 11, 14, and May 16 – 18; and
  - Morrow Lake Dam on May 8.
- Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.
- During the operational period, Enbridge sheet piled and excavated a new pipeline trench at the Source Area, as part of their Line 6B Maintenance and Rehabilitation Program. The eastern 100 feet of the Source Area was excavated to a depth of 2 feet. Oil sheen and/or tar globules were not observed in this area. The remainder of the excavation in the western portion of the Source Area was excavated to a depth between 5 and 6 feet, due to the presence of oil sheen and/or tar globules during the excavation activities. Impacted soils removed from the excavation were sampled and transported in lined trucks for disposal.

### **3.2 Environmental Unit**

- U.S. EPA, USGS, and the U.S. Army Corps of Engineers held weekly meetings to discuss upcoming Hydrodynamic Model (HDM) activities.
- U.S. EPA approved Enbridge's 2013 Submerged Oil Removal and Assessment Work Plan (2013 Work Plan) required by the March 14, 2013 U.S. EPA Order with modifications on May 8, 2013. Enbridge submitted supplements to the 2013 Work Plan entitled "Management of Public River Access During Dredging Operations Work Plan" and "Legacy Contamination Data Gap Evaluation Work Plan" on May 17, 2013. The supplements are currently in review with U.S. EPA.
- U.S. EPA provided Enbridge with a review of Enbridge's Quantification of Submerged Oil Report (March 21, 2013) on May 8, 2013.

### **3.3 Documentation Unit**

- The Documentation Unit continued organizing and archiving electronic and paper files for post-incident use.

### **3.4 Resource Unit**

- The Resources Unit continued to support production of the Incident Action Plan (IAP), supported the planning efforts of operations, and provided information to Logistics personnel in order to properly prepare and procure resources.



## **4. Command**

### **4.1 Safety Officers**

- Enbridge safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.

### **4.2 Public Information**

- The number of public inquiries reported by Enbridge for this period is presented in Table 7.

## **5. Finance**

- The current National Pollution Funds Center (NPFC) ceiling is \$59.8 million. Approximately 88.2% of the ceiling has been spent through May 20, 2013. The latest average 14-day burn rate was \$28,717 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 8.

## **6. Scientific Support Coordination Group (SSCG)**

- No activities were conducted during this operational period.

## **7. Participating Entities**

- Entities participating in the MAC include:
  - U.S. Environmental Protection Agency
  - Michigan Department of Environmental Quality
  - Michigan Department of Community Health
  - City of Battle Creek
  - City of Marshall
  - Allegan County Emergency Management
  - Calhoun County Public Health Department
  - Calhoun County Emergency Management
  - Calhoun County Water Resources Commission
  - Kalamazoo County Health and Community Services Department
  - Kalamazoo County Sheriff
  - Enbridge (Responsible Party)
- For a list of cooperating and assisting agencies, see SITREP #51 (Sections 3.2 and 3.3).

## **8. Personnel On-Site**

- Staffing numbers for the entities and agencies active in the response are presented in Table 9.

## **9. Source of Additional Information**

- For additional information, refer to <http://www.epa.gov/enbridgespill>. For sampling analysis data, see <http://response.enbridge.com/response/>.

## 10. Clean-up Progress Metrics

**Table 1 – Sheen Differentiation Test Results**

Description	Total	May 2013													
		19	18	17	16	15	14	13	12	11	10	9	8	7	6
Sheen Tests Performed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Results Indicated Petroleum Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Results Indicated Biogenic Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inconclusive Test Results	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 2 – Sheen Responses**

Total	May 2013													
	19	18	17	16	15	14	13	12	11	10	9	8	7	6
28	0	1	5	2	0	1	1	0	2	3	4	1	3	5

**Table 3 - Soil and Debris Shipped Off Site (as of 5/19/2013)**

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd<sup>3</sup>)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	78,118	SET/C&C
<i>Non-Haz Soil &amp; Debris (yd<sup>3</sup>)</i> (Excluding Ceresco Dredge)	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd<sup>3</sup>)</i> (Ceresco Dredge Only)	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd<sup>3</sup>)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	1,807	SET/C&C
Non-Haz Impacted Debris (ton)	7,163	

*Shaded and italicized items are discontinued waste streams.*

**Table 4 - Liquid Shipped Off-Site (as of 5/19/2013)**

Stream	Destination Company	Destination Location	Cumulative Volume (gallons)†
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,376,757
Non-Haz Water	Plummer	Kentwood, MI	611,726
<i>Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	981,792
<i>Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,143,280
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	3,594,579
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	766,288
<i>Other Material</i>			1,405,525
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	370,200
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	4,976,140
<i>Hazardous Water</i>	<i>Safety Kleen<sup>a</sup></i>		825
<i>Treated Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	150,700
<i>Treated Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,968,700
<b>Total</b>			<b>17,346,512</b>

*Shaded and italicized items are discontinued waste streams.*

† Cumulative quantities may not reconcile with previous reports (due to auditing).

a New Age lab water and methanol mix generated by mobile laboratory.

**Table 5 – Estimated Recovered Oil (as of 5/20/2013)**

Waste Stream Containing Recovered Oil	Destination Company	Destination Location	Estimated Oil Volume in Waste Stream (gallons)
<b>Soil</b> Impacted Soil & Debris	C&C Landfill	Marshall, MI	14,034
	Envirosafe/ Westside RDF	Oregon, OH	278,665
<i>Geotube Sediment - (Impacted Sediment)</i>	<i>Envirosafe/ Westside RDF</i>	<i>Oregon, OH</i>	<i>1,298</i>
<b>Debris</b> - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	34,513
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>8,109</i>
<b>Frac Tank City - Water</b>	Dynecol	Detroit, MI	46,176
	Liquid Industrial Waste Services, Inc.	Kentwood, MI	
	Plummers Env. Inc.	Holland, MI	
	BC POTW	Battle Creek, MI	
<i>Ceresco Pretreatment System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>90</i>
<i>A-1 Pretreatment System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>9</i>
<b>Oily Water - RPP</b>	Enbridge Facility	Griffith, IN	766,288
<b>Total</b>			<b>1,149,183</b>

Shaded and *italicized* items represent discontinued waste streams.

**Table 6 – Samples Collected By Enbridge**

Sample Type	Total	May 2013													
		19	18	17	16	15	14	13	12	11	10	9	8	7	6
Surface Water	19	0	0	0	0	1	17	0	0	0	0	0	1	0	0
Private Well	17	0	0	0	0	0	0	0	0	0	0	0	17	0	0
Groundwater	11	0	4	0	7	0	0	0	0	0	0	0	0	0	0
Sediment	80	0	0	0	23	20	12	22	0	0	0	0	2	0	1
Soil	92	0	9	0	7	12	7	6	0	0	10	13	10	14	4
Product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dewatering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheen	16	0	2	0	1	0	1	1	0	0	3	2	1	3	2

**Table 7 – Public Inquiries Received by Enbridge**

Location/Med	May 2013														
	19	18	17	16	15	14	13	12	11	10	9	8	7	6	
Marshall Community Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oil Spill Public Information Hotline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Website	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total Public Inquiries</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	



**Table 8 - Financial Summary (as of 5/20/2013)**

Item	Expended (Cumulative)
<b><i>ERRS Contractors</i></b>	
<i>EQM (EPS50802)</i> T057	\$ 1,199,522
T060	\$ 213,636
<i>LATA (EPS50804)</i> T019	\$ 1,161,082
<i>ER LLC (EPS50905)</i> T040	\$ 683,330
<b><i>Total ERRS Contractors</i></b>	<b>\$ 3,257,571</b>
<b><i>Other Contractors</i></b>	
<i>Lockheed Martin (EPW09031) – TAGA Support</i>	\$ 198,379
<i>Lockheed Martin (EPW09031) -Biodegradability Study</i>	31,554
<i>T&amp;T Bisso (EPA:HS800008)</i>	\$ 882,087
<b><i>Total Other Contractors</i></b>	<b>\$ 1,112,020</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 31,564,589
Community Relations	\$ 114,563
T032-Sampling	\$ 184,992
T037-Doc Support	1,907,221
<b>Total START Contractor</b>	<b>\$ 33,771,365</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 38,166,536</b>
<b>U.S. EPA Funded Costs: Total U.S. EPA Costs</b>	<b>\$ 6,413,272</b>
<b>Pollution Removal Funding Agreements</b>	
Total Other Agencies	\$ 2,797,081
Indirect Cost (16.00%)	\$ 3,598,252
Indirect Cost (8.36%)-payments after 10/1/2011	\$ 1,310,859
Indirect Cost (10.15%)-payments after 10/1/2012	\$ 655,143
Cost Documentation/Billing Admin Fee (2.93%)*	\$ 422,920
<b>Total Est. Oil Spill Cost</b>	<b>\$ 52,753,812</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 59,800,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 7,046,188</b>

Shaded and *italicized* items are discontinued

\* Effective on EPA Enbridge costs billed to USCG for bills issued after 6/5/12.

**Table 9 - Personnel On-Site**

Agency/Entity	May 2013													
	19	18	17	16	15	14	13	12	11	10	9	8	7	6
U.S. EPA	0	0	1	3	4	3	2	0	0	3	4	3	4	3
START	0	10	20	22	22	20	23	1	3	14	16	17	17	17
MDEQ	0	0	2	3	2	2	3	0	0	3	2	3	8	3
MDEQ Contractors	0	0	2	3	3	3	3	0	0	1	3	3	2	2
Other Agencies	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Calhoun County (CC) Public Health	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CC Emergency Management (EM)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CC Water Resources Commission	0	0	0	0	0	0	0	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
City of Marshall	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalamazoo County EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalamazoo County Sheriff	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MDEQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MDCH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allegan County Emergency Mgmt.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enbridge – Kalamazoo River*	0	0	13	12	12	13	6	6	6	6	6	6	6	6
Enbridge – Containment*	0	6	9	9	14	13	12	14	12	14	10	10	10	10
Enbridge – Submerged Oil*	0	30	40	42	39	36	22	6	5	9	10	11	11	11
Enbridge – Waste Management*	0	2	2	2	2	2	2	1	1	2	2	2	2	2
Enbridge – Marshall Office*	5	18	58	65	64	65	57	37	40	60	67	62	58	52
<b>Total</b>	<b>5</b>	<b>66</b>	<b>148</b>	<b>162</b>	<b>162</b>	<b>157</b>	<b>130</b>	<b>65</b>	<b>67</b>	<b>112</b>	<b>120</b>	<b>117</b>	<b>118</b>	<b>106</b>

\*Enbridge Operations and Field include Enbridge and contractors as reported by Enbridge